

Communication

Hood Canal Bridge Project Team

The ultimate goal of the Hood Canal Bridge team is to administer a world-class project to replace the Hood Canal Bridge. Meet one of the people who make it all happen.



Jay Cooper, Hood Canal Bridge Team, Project Inspector

Jay brings extensive floating bridge experience and knowledge to the Hood Canal Bridge project. From November 1994 to June 1999 he worked on the bridge maintenance crew that tended to the three Lake Washington floating bridges. Then, he spent six years overseeing the construction of more than twenty bridges in the Puget Sound Area.

This combination of experience in both maintenance and construction makes Jay a valuable addition to the HCB team. He has an appreciation of how to build concrete structure and an operational perspective on how floating bridge components work together.

Outside of work, Jay enjoys spending time with his wife Kara and using his season tickets to attend Washington State University football games.

Project Responsibilities: Inspect and administer the Concrete Technology site-specific construction components on the pontoons. Questions? cooperj@wsdot.wa.gov or (253) 305-6434

Coming in April...

Moving Materials

Moving forms, rebar and other supplies from three different storage areas to inside the 150-foot wide by 465-foot long graving dock is challenging. This huge effort requires a tremendous amount of planning by engineers and craft superintendents. Learn how WSDOT and K-G crews located workers and machinery to get materials moving.



This report highlights Hood Canal Bridge Project information from **February 1-28, 2006**. For more information about the Hood Canal Bridge Project visit the project web site, www.hoodcanalbridge.com, or contact project staff:
Becky Hixson, Communication Manager, (253) 305-6450, hixsonb@wsdot.wa.gov
Eric Soderquist, Project Director, soderqe@wsdot.wa.gov

Hood Canal Bridge Retrofit and East-half Replacement Project

East-half Replacement
Completion Goal: 2009
West-half Retrofit Completion: 2010

Q. Where is the bridge?

A. The Hood Canal Bridge is located between Kitsap and Jefferson counties at the northern mouth of the Hood Canal.

Q. Why is it important?

A. It serves as a vital economic and social link between the greater Puget Sound and the Olympic Peninsula.

Q. What is WSDOT doing?

A. The Washington State Department of Transportation is improving this lifeline by replacing the east-half floating portion of the bridge, replacing the east and west approach spans, replacing the east and west transition truss spans and updating the west-half electrical system. The project completion estimate is 2010.

Q. What can drivers do to stay informed?

A. Sign up to receive the latest news regarding the Hood Canal Bridge Project and other related area transportation news right in your email inbox. Visit www.hoodcanalbridge.com to subscribe.

Monthly Report

February 2006



Hood Canal Bridge Retrofit and East Half Replacement Project

East-half Replacement Completion Goal: 2009
West-half Retrofit Completion: 2010

Project Delivery

Over the next few years, the Hood Canal Bridge Project will track its progress in a simple, visual way. We will fill in the percent completed on an icon representing each of the six major project work areas. We hope this helps you “see” the Hood Canal Bridge Project’s monthly progress.

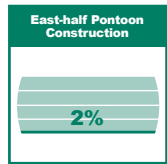
Hood Canal Bridge Project’s Six Major Work Areas



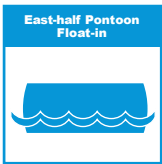
East- and West-half Material Fabrication
Fabrication and assembly of steel bridge parts such as truss and transition spans, pontoon hatches, drawspan machinery and drawspan hydraulic components.



East-half Assembly, Outfitting and Testing
Connecting the individual pontoons together into three large segments, building elevated roadway sections on top of the pontoons, installing all electrical and mechanical parts and testing the retractable draw span assembly units.



East-half Pontoon Construction
Building 14 new pontoons in four cycles at Concrete Technology in Tacoma and towing them to Seattle for assembly, outfitting and testing.



East-half Float-in
Floating the pontoons from Seattle to the bridge site, putting them in place, connecting them together and installing the transition spans. The bridge will be closed to traffic during this time.



East-half Anchor Construction
Constructing 20 anchors and placing them on both sides of the bridge at the bottom of Hood Canal.



West-half Mechanical and Electrical Retrofitting
Upgrading the mechanical and electrical systems on the west half to function effeciently with the new east half.

Accountability



Crew pours concrete in to the pontoon mock-up, Feb. 14, 2006.



Ironworkers pour high-strength grout into forms to create mortar blocks. These blocks are used as spacers between rebar., Feb. 23, 2006.



Mock-up wall forms set in place, Feb. 23, 2006.

Producing Quality Work: Pontoon mock-up construction yields valuable lessons

WSDOT and Kiewit-General are constructing a pontoon mock-up, or scale model, of a Hood Canal Bridge pontoon section. Taking lessons learned from the previous west-half construction in 1981, the I-90 Lake Washington Lacey V. Murrow bridge, and the construction of a full-scale pontoon end section at Port Angeles in 2003, crews began constructing a mock-up of one of the most commonly shaped Hood Canal Bridge pontoon cells.

The pontoon mock-up building process includes:

- 1. Installing forms
- 2. Placing all materials that go inside a wall (reinforcing steel, post-tensioning ducts, electrical conduit and mechanical piping)
- 3. Pouring concrete
- 4. Removing forms

Each time a pontoon mock-up is completed, construction crews learn vital information applicable to actual pontoon construction. “Our goal is to produce a quality product that will last for decades to come,” said Phil Wallace, K-G pontoon construction manager. “This is an opportunity for crews to learn as much as they can prior to actually building the real thing.”

During this exercise, the pontoon mock-up team:

- **Evaluated material placement inside the pontoon.** Design and construction engineers changed material locations in the pontoon designs to prevent problems caused by placing too many materials in the same area within the cell wall.
- **Found the best concrete consistency needed for pouring pontoon concrete.** If the concrete is too thick, it will not flow in between all the rebar, ducts, conduit and piping. If the concrete is too runny, all the rocks settle to the bottom of the form, reducing the concrete strength. Testing different concrete mixes in various locations helped the team target the right concrete consistency.

- **Defined a preferred method for building construction joints.** Taking the time to test several methods allowed the crew to identify the best one.
- **Determined an acceptable placement rate for the concrete.** Pouring concrete too fast can put too much stress on the forms, causing them to leak. Pouring too slowly increases the risk of developing “cold joints,” or areas where the two concrete pours meet but don’t adhere.

When this full-scale model of a “typical” pontoon cell is complete, crews will have tested different construction methods, identified the best methods, as well as discovered new techniques that will save time and resources during the construction of the actual pontoons. “We have a lot of pontoon experience on this job. We are applying our collective knowledge and experience to get the job done right” said WSDOT Construction Manager Scott Ireland. Every effort has been made to ensure that experienced workmanship, durable materials and best methods have been combined to produce quality pontoons.

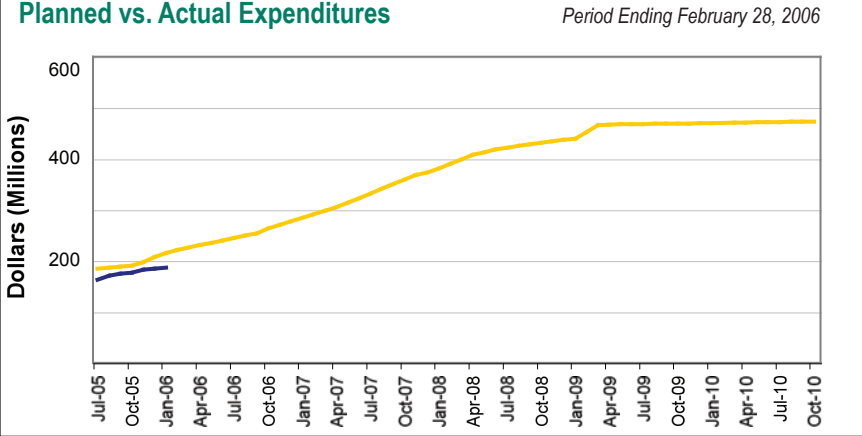
Financial Status
Project Cost Summary

Project Cost Summary

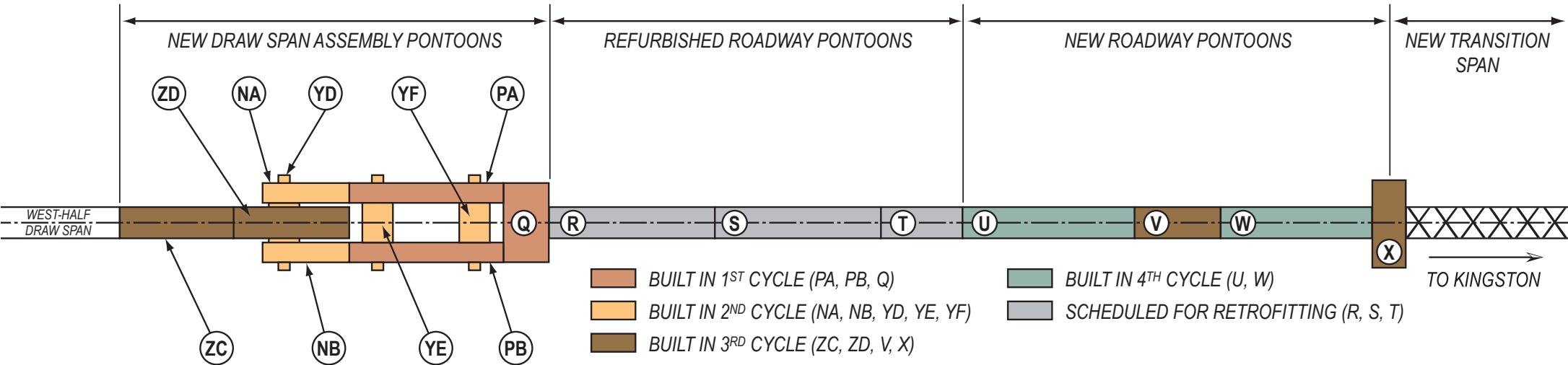
Period Ending February 26, 2006

CATEGORY	BUDGET	EXPENDED	% EXPENDED
ORIGINAL COMMITMENTS			
Preliminary Engineering	13,990,000	\$12,065,093	86%
Port Angeles Graving Dock	86,823,000	\$84,000,000	97%
Bridge Rehabilitation & Approaches	54,760,000	\$47,472,922	87%
Major Materials for Bridge Completion	61,440,000	\$45,000,912	73%
Anticipated Audit Adjustment	(10,950,000)	–	0%
MODIFIED COMMITMENTS			
Construction Management	32,036,000	\$2,658,947	8%
Closure Mitigation	9,644,000	\$51,559	1%
New Facilities and Bridge Completion	220,500,000	\$4,040,301	2%
Mechanical & Electrical Retrofitting	2,725,000	–	0%
TOTAL PROJECT	470,968,000	195,289,734	41%

Planned vs. Actual Expenditures



Birds-eye View of New East-half



Performance Measures:

Reducing Rework

One of the reasons the Hood Canal Bridge Team completes test activities, like the pontoon mock-up exercise, is to minimize schedule delays and cost overruns due to rework. Rework is repeating or replacing something because of design changes or construction errors.

The old adage “practice makes perfect,” applies to the bridge building industry, too. The Hood Canal Bridge Project Construction Team is reaching for the goal of beating the industry average.

It is typical to have rework at the beginning of any construction project, but minimizing the amount is important for several reasons: it keeps costs down; the project on schedule; and, the project’s focus on the tasks most critical to success. Both WSDOT and K-G expect to see the amount of rework decrease as new crews become more familiar with pontoon construction methods and continue to identify efficiencies in the production process.